

CLAIMS

- 1 A material for use in covering objects for microwave heating comprising a substrate
substantially transparent to microwave radiation bearing an array of low emissivity
5 metal patch elements defining a frequency selective surface adapted to pass
microwave radiation and reflect thermal infrared radiation, the characteristic
dimension of said patch elements being no greater than about 1600 μ m, the average
spacing between said patch elements being no greater than about 200 μ m and the
combined emissivity of the substrate and patch elements being no greater than about
10 0.8 in the thermal infrared waveband.
- 2 A material according to claim 1 wherein said array is substantially transparent to
radiation in the region of 2.45 GHz.
- 15 3 A material according to claim 1 or claim 2 wherein the characteristic dimension of
said patch elements is no greater than about 500 μ m and the average spacing
between said patch elements is no greater than about 100 μ m
- 4 A material according to any preceding claim wherein the combined emissivity of the
20 substrate and patch elements is no greater than about 0.4 in the thermal infrared
waveband.
- 5 A material according to claim 4 wherein the combined emissivity of the substrate and
patch elements is no greater than about 0.2 in the thermal infrared waveband.
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- 6 A material according to any preceding claim wherein said substrate comprises a film
of polyester, polypropylene, polyethylene or nylon.
- 7 A material according to any preceding claim wherein said patch elements are
30 composed of aluminium, copper, gold, titanium or chromium.
- 8 A material according to any preceding claim wherein said patch elements are in the
shape of squares, rectangles, hexagons, circles or crosses.
- 35 9 A packaging material for microwavable foodstuff comprising a material according to
any preceding claim.

- 10 10 A package for microwavable foodstuff comprising a material according to any one of claims 1 to 8.
- 5 11 A packaged microwavable foodstuff wherein the package comprises a material according to any one of claims 1 to 8.
- 12 12 A bandage or patch adapted to be worn on the body comprising a material according to any one of claims 1 to 8.
- 10 13 A method of heating an object which comprises covering the object with a material according to any one of claims 1 to 8 and exposing the material to microwave radiation.
- 15 14 A method of manufacturing a material according to any one of claims 1 to 8 which comprises: taking a material comprising a substrate substantially transparent to microwave radiation upon which is vacuum deposited a continuous metal foil; applying an etch-resistant substance to the metal foil in patches corresponding to said array; and chemically etching away the metal exposed between the patches of etch-resistant substance.
- 20 15 A method of manufacturing a material according to any one of claims 1 to 8 which comprises vacuum depositing a metal onto a substrate substantially transparent to microwave radiation through a mask with a pattern corresponding to said array.
- 25 16 A method of manufacturing a material according to any one of claims 1 to 8 which comprises: taking a material comprising a metal foil with a heat-sensitive adhesive backing; bonding said foil to a substrate substantially transparent to microwave radiation with a heated stamp having a pattern corresponding to said array; and removing the portions of said foil left unbonded by said stamp.
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